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| 10/036,646 | 11/07/2001 | Sujatha Ramanujan | 83509NAB | 5815 |

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| ART UNIT | PAPER NUMBER |
|---|---|
| 2677 | |

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/036,646 | RAMANUJAN, SUJATHA | |
| | Examiner | Art Unit | |
| | Leonid Shapiro | 2673 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *20 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-3,5-14 and 17-99* is/are pending in the application.

4a) Of the above claim(s) *22-99* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-14 and 17-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 3, 6-7, 9-10, 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dewald et al. (US Patent No. 6,771,335 B1) in view of Hewlet et al. (5,812,303).

As to claim 1, Dewald et al. teaches a display apparatus for projection of an image-caring beam from digital data (See Fig. 1, item 108, Col. 5, Lines 14-18) on display surface (See Fig. 2, item 214, Col. 5, Line 26-43), the apparatus comprising:

(a) a light source for providing a beam of multicolor light (See Fig. 2, item 202, Col. 5, Lines 26-31);

(b) a variable filter disposed to provide a periodic attenuation of a range of component wavelengths of beam of multicolor light in order to provide tinted beam (See Fig. 2, item 206, Col. 5, Lines 26-31);

© spatial light modulator for modulating variably tinted beam according to color digital data to provide image-carrying beam (See Fig. 5, item 210, Col. 5, Lines 36-42 and Col. 11, Lines 1-10 for single LCD);

(d) a control logic processor for modulating a bias voltage (color image data) to said spatial light modulator (LCD or DMD) (See Col. 11, Lines 1-10), said bias voltage modulation (color image data) synchronous with said periodic attenuation

of said variable filter such that a composite time integrated image carrying beam displays tone values of a hue (See Fig. 2, item 216, Col. 5, Line 41-43).

Dewald et al. does not disclose a single tone values of single hue.

Hewlett et al. teaches a single tone values of single hue (in the reference is equivalent to the predetermined shade of gray) (See Col.5, Lines 18-24).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Hewlett et al. into Dewald et al. system in order to produce less artifacts (See Col. 2, Lines 15-18 in the Hewlett et al. reference).

As to claim 3, Dewald et al. teaches SLM could be one-panel liquid crystal device (LCD) (See Col. 11, Lines 1-10).

As to claims 6-7, Dewald et al. teaches viewing screen which could be a direct-view display surface or a projection screen (See Fig. 1, item 110, Col. 5, Lines 14-24).

As to claims 9-10, Dewald et al. teaches projection optics for projection of image-carrying beam onto direct-view surface or projection screen (See Fig. 1, item 110).

As to claims 18-19, Dewald et al. teaches variable filter is stationary and rotates in the path of light source (See Fig. 2, item 206, Col. 5, Lines 26-36).

2. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dewald et al. and Hewlett et al. as applied to claim 1 above, and further in view of Richards (US Patent No. 6388,661 B1) .

As to claim 21, Dewald et al. and Hewlett et al. do not disclose light source comprises LED.

Richards teaches light source comprises LED (See Col. 2, Lines 30-34).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Richards into Dewald et al. and Hewlett et al. system in order to use ultraportable applications (See Col. 2, Lines 30-34 in Richrds reference).

3. Claims 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dewald et al. and Hewlett et al. as applied to claim 1 above, and further in view of Tanaka et al. (US Patent No. 6,388,649 B1).

Dewald et al. and Hewlett et al. do not show a reflective liquid crystal device as spatial light modulator.

Tanaka et al. teaches a reflective liquid crystal device as spatial light modulator (See Fig. 21, item 2103).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Tanaka et al. into Dewald et al. and Hewlett et al. apparatus to perform a monochrome on the screen (See Col. 28, Lines 47-48 in Tanaka et al. reference).

4. Claims 5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dewald et al. and Hewlett et al. as applied to claim 1 above, and further in view of Dawson (Pub. N0.: US 2002/0021832 A1).

Dewald et al. and Hewlett et al. do not show variable filter modulates birefringence.

Dawson teaches Variable Birefringence Polarized Interference Filters (See in description page 12, paragraph 0247).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Dawson Birefringence Filters in Dewald et al. and Hewlett et al. apparatus to provide a beam of multicolor light.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dewald et al. and Hewlett et al. as applied to claim 1 above, and further in view of Eaton (US Patent No. 4,876,608).

Dewald et al. and Large et al. do not show display surface is image-retentive.

Eaton teaches a charge retentive surface (See Fig. 1, items 16, 18, 22, Col. 4, Lines 34-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Eaton charge retentive device in Dewald et al. and Hewlett et al. apparatus to retain an image.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dewald et al. and Hewlett et al. as applied to claim 1 above, and further in view of Berlin (US Patent No. 5,815,303).

Dewald et al. and Hewlett et al. do not show intensity control for adjusting the intensity of light source.

Berlin teaches intensity control for adjusting the intensity of light source (See Fig. 1, item 50, Col. 10, Lines 41-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Berlin into Dewald et al. and Hewlett et al. apparatus to improve an image.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dewald et al. and Hewlett et al. as applied to claim 1 above, and further in view of Washburn (US Patent No. 5,585,691).

Dewald et al. and Large et al. do not show an operator control for hue adjustment.

Washburn teaches an operator control for hue adjustment (See Fig. 7, item 23-05, Col. 23, Lines 39-59).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Washburn into Dewald et al. and Hewlett et al. apparatus to improve an image.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Washburn, Dewald et al. and Hewlett et al. as applied to claim 12 above, and further in view of Wang (US Patent No. 6,278,540 B1).

Washburn, Dewald et al. and Large et al. do not show an operator control bias voltage to the spatial light modulator.

Wang teaches an operator control bias voltage to the spatial light modulator (See Fig. 19, item 1010A, 1010B, Col. 9, Lines 8-22).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Wang into Washburn, Dewald et al. and Large et al. system to improve an image.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Washburn, Dewald et al. and Hewlett et al. as applied to claim 12 above, and further in view of Wang (US Patent No. 6,278,540 B1).

Washburn, Dewald et al. and Hewlett et al. do not show intensity control for adjusting the intensity of light source.

Berlin teaches intensity control for adjusting the intensity of light source (See Fig. 1, item 50, Col. 10, Lines 41-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Berlin into Washburn, Dewald et al. and Hewlett et al. apparatus to improve an image.

10. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dewald et al. and Hewlett et al. as applied to claim 1 above, and further in view of Patel et al. (US Patent No. 4,935,820).

Dewald et al. and Hewlett et al. do not show color filter is interchangeable.

Patel et al. teaches color filter is interchangeable (See Fig. 1, item 7, Col. 5, Lines 46-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Patel et al. into Dewald et al. and Hewlett et al. apparatus to improve an image.

***Response to Amendment***

11. Applicant's arguments filed on 09/20/05 with respect to claims 1-3,5-14,17-21 have been considered but are moot in view of the new ground(s) of rejection.

***Telephone inquire***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LS
11.16.05

AMR A. AWAD
PRIMARY EXAMINER